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CANADIAN PATENT

SEAT CONSTRUCTION FOR UPHOLSTERED FURNITURE

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No. OF CLAIMS 8

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This invention relates to upholstered furniture and more particularly to an improved seat construction for such furniture.

The principal object of the invention is the provision of a seat construction for upholstered furniture providing a satisfactory depth of seating in a minimum of vertical space.

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A further object of the invention is the provision of a seat construction for upholstered furniture in which a resilient body of urethane foam is positioned on a yieldable support as a base construction for seat cushions in the furniture.

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A further object of the invention is the provision of a seat construction for upholstered furniture in which a maximum depth of seating is obtained in a minimum amount of space through the use of urethane foam characterized by its ability to be compressed into an exceedingly small space.

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A still further object of the invention is the provision of a seat construction for furniture which provides a sturdy and long lasting construction suitable for supporting the seat cushions in the furniture and capable of retaining its desired height and shape despite repeated distortions.

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A still further object of the invention is the provision of

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a seat construction for upholstered furniture that may be quickly and inexpensively formed and which will provide a cushioned structure comparable in all respects with the metal spring constructions heretofore used for such purposes. The seat construction disclosed herein comprises an improvement in the art of seat constructions in upholstered furniture. It has heretofore been customary to utilize metal springs of one form or another in the base portion of the furniture for supporting the seat cushions.

5 Such metal spring constructions require a rather substantial overall height which necessitated the formation of the furniture with a rather thick, bulky base portion. Such constructions are not capable of being effectively used in the so-called Danish or Scandinavian furniture designs where the total seat thickness is relatively thin. In producing upholstered furniture such as chairs and sofas, it is highly desirable to provide a depth of seating comparable with that of the known and accepted metal spring constructions heretofore generally used. The present invention relates to

10 a construction which utilizes a section of urethane foam supported on a thin support member and provides a depth of seating heretofore

15 impossible to obtain without metal spring constructions of several

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times the thickness or height of the present construction.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

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The invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a top plan view of a base portion of an upholstered chair frame with the improved seat construction, parts being broken away.

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Figure 2 is a vertical section through a base portion of an upholstered chair frame showing the improved seat construction.

Figure 3 is a top plan view of a sofa showing the improved seat construction, with parts broken away.

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By referring to the drawings and Figure 1 in particular,

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it will be seen that a base of an upholstered chair frame has been disclosed which includes side rails 10 and 11 and front and back rails 12 and 13; secondary front and back rails 14 and 15 are positioned adjacent the front and back rails 12 and 13 respectively. The secondary front rail 14 is secured to a transversely positioned rail 16 so that the secondary rail 14 is spaced with respect to the front rail 12. A sheet of material 17 such as woven jute, burlap, or rubber or plastic sheeting is attached to the secondary front rail 14 along the forward side thereof as best seen in Figure 2 of the drawing. The sheet of material 17 is hemmed at its other three edges as at 18 and 19 and 20 and a steel rod 21 of general "U" shape with outturned end portions 22 is positioned in the hems 18, 19 and 20 with the outturned ends 22 secured to the secondary rail 14 by a pair of brackets 23. A plurality of springs 24 are engaged on the steel rod at spaced intervals along its three sides and are in turn secured to brackets 25 which are attached to the side rails 10 and 11 and the secondary back rail 15. The springs 24 engaging the rod 21 tension the material 17 and provide a suitable supporting member in the construction. By referring

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now to Figures 1 and 2, it will be seen that a section 26 of urethane foam is positioned directly on the sheet material 17 and is supported thereby. Two elongated sections 27 and 28 of urethane foam are positioned on the top and front surfaces respectively of the front rail 12 and a section of fabric 29 is secured to the bottom of the front rail 12 and brought upwardly and rearwardly over the sections 27 and 28 of urethane foam and then downwardly and secured to the front of the secondary front rail 14. Another section of fabric 30 is secured to the front of the secondary front rail 14 and extended rearwardly over the top of section 26 of urethane foam and secured at its rearmost edge to the back rail 13. The sections of fabric 29 and 30 may be muslin or any other fabric or they may comprise sections of the upholstery material used on the furniture.

By referring to Figure 2, it will be seen that an apron 31, which comprises a section of suitable fabric, is secured to the bottom of the transversely positioned rail 16, brought upwardly and attached to the flexible material 17 extended rearwardly therebeneath and then brought downwardly and secured to the back rail 15. The apron 31 provides a finished appearance on

the bottom of the construction. Legs 32 are secured to the back rail 13 and to the transversely positioned rail 16 so that the construction is supported thereon.

5. The seat construction illustrated in Figures 1 and 2 is that used in a chair and dotted lines in Figure 2 indicate the positioning of the back 33 of the chair frame, the back cushion 34 and the seat cushion 35. It will be understood by those skilled in the art that the back 33 may be formed in the same manner as the seat construction just described.

10 The seat construction disclosed herein possesses the unique ability of providing a very desirable depth of seating due to the unique compressibility of the urethane foam section 26 as well as the section used in the seat cushion 35. Those skilled in the art will observe that the total depth of the construction is very shallow as compared with the constructions heretofore known in the art in which utilized metal springs. This shallow depth permits the upholstered furniture to be positioned on long slim legs giving it a light and airy look and conforming with the desired Danish or Scandinavian furniture designs while at the same time providing an extremely comfortable and practical

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construction. It will occur to those skilled in the art that when the sheet material 17 is formed of rubber or resilient plastic the springs 24 may be dispensed with and the resiliency of the material itself depended upon to suitably support the section 26 of urethane foam. In such event, the four sides of the section 17 are secured directly to the front, side and back rails 14, 11, 12 and 15 of the furniture frame in exactly the same manner as the front edge of the sheet material 17 is shown and illustrated herein. In such event, the "U" shaped rod 21 is also omitted.

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By referring to the drawings and Figure 3 thereof, a seat construction for a sofa may be seen wherein a frame comprising a front rail 36 and a back rail 37 and side rails 38 and 39 is provided with a secondary front rail 40 positioned in spaced relation to the front rail 36 in exactly the same manner as the secondary front rail 14 heretofore described. Sheet material 41 is secured at its front edge to the secondary front rail 40 and its back and sides are hemmed as at 42 and a rod 43 is positioned therethrough and supported by a plurality of springs 44 secured to brackets 45. In the sofa seat construction

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a pair of additional rods 46 are secured to brackets 47 on the secondary front rail 40 and extend backwardly beneath the sheet material 41 and are secured to a pair of the springs 44. The rods 46 provide additional support under the center section of the construction so that there will be no tendency of the sheet material 41 to sag.

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When rubber or plastic sheet material 41 is used the springs 44 and the rods 42 may be omitted from the construction. The seat construction illustrated in Figure 3 is finished by adding a rectangular section 48 of urethane foam in exactly the same manner as the urethane foam section 26 in Figure 2 and heretofore described and elongated sections 49 and 50 of urethane foam are positioned on the front and upper surfaces of the front rail 36 in the same manner as the sections 27 and 38 of urethane foam heretofore described in Figure 2. Sections of fabric 51 and 52 are applied to hold the several sections 48, 49 and 50 of urethane foam in desired position in the seat construction as heretofore described in Figure 2 of the drawings.

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It will thus be seen that a seat construction for upholstered

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furniture has been disclosed which may be used in chairs and
sofas and the like and which seat construction, through the
utilization of urethane foam and the means of supporting and
positioning it in the construction meets the several objects of
the invention.

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Having thus, described my invention, what I claim is:

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

- 1 1. A seat construction for upholstered furniture comprising in combination a frame having front, back and side rails, a secondary front and back rails positioned in co-axial relation to said front and back rails, a section of flexible sheet material secured to said secondary front and back rails and stretched therebetween and secured at its side edges to said side rails, and a first section of urethane foam positioned on said section of flexible sheet material, additional sections of urethane foam positioned on said front rail and separate sections of flexible sheet material one of which is secured to said frame and positioned over said additional sections of urethane foam on said front rail so as to hold said foam in position thereon and another one of which is secured to said secondary front rail and to said back rail and positioned over said first section of urethane foam so as to hold the same in position on said first-mentioned section of flexible sheet material.
- 2 2. The seat construction set forth in claim 1 and wherein the first-mentioned section of flexible material comprises resilient rubber-like sheeting.

1 3. The seat construction set forth in claim 1 and wherein
2 said first-mentioned section of flexible material comprises a
3 section of fabric having three edges thereof hemmed and secured
4 at its fourth edge to said secondary front rail, rods disposed one
5 in each of said hemmed edges, brackets positioned on said side
6 and secondary back rails and springs positioned between said
7 rods and said brackets and tensioning said flexible material.

1 4. A seat construction for upholstered furniture including
2 a frame having front and back and side portions spaced with res-
3 pect to one another and secured at their ends to one another,
4 said front portion of said frame comprising a first frame member
5 and an L-shaped second frame member secured thereto longitu-
6 dinally thereof to form a channel open at its top, said second
7 frame member positioned on the inner side of said first frame mem-
8 ber, a first section of thin flexible material secured to the front
9 of said second frame member and to the front of said back portion
10 and to said side portions and stretched tightly therebetween, a
11 flat section of urethane foam disposed on said first section of
12 thin flexible material, a second section of urethane foam posi-
13 tioned in front of and over said first frame member of said frame
14 and a second section of thin flexible material secured to said first
15 frame member and said second frame member and covering said sec-
16 ond section of urethane foam thereon.

1 5. The seat construction set forth in claim 4 and wherein
2 said first and second sections of material are resilient.

1 6. The seat construction set forth in claim 4 and wherein
2 said first section of material is attached to helical springs at its
3 side and back edges and wherein said helical springs are attached
4 to said side and back portions of said frame.

1 7. The seat construction set forth in claim 4 and wherein
2 at least one rod is attached at one of its ends to said front frame
3 portion and a spring is attached to the other end of said rod and to
4 said back frame portion and wherein said rod is positioned beneath
5 said first section of thin flexible material.

1 8. A seat construction for upholstered furniture comprising
2 in combination a frame having a front, a back and side rails, a
3 secondary front rail positioned in co-axial relation to said front rail,
4 a section of flexible sheet material secured to said secondary front
5 rail and to said back rail and stretched therebetween and secured
6 at its side edges to said side rails, and a first section of urethane
7 foam positioned on said section of flexible sheet material, additional
8 sections of urethane foam positioned on said front rail and separate
9 sections of flexible sheet material one of which is secured to said
10 frame and positioned over said additional sections of urethane foam
11 on said front rail so as to hold said urethane foam in position thereon
12 and another one of which is secured to said secondary front rail and
13 to said back rail and positioned over said first section of urethane
14 foam so as to hold the same in position on said first-mentioned sec-
15 tion of flexible sheet material.

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